REMARKS

Reconsideration and allowance are respectfully requested.

The abstract is amended as required by the Examiner and to conform the language to U.S. patent practice.

A substitute specification is submitted correcting grammatical errors and idiom and amending the text in accordance with U.S. patent practice. No new matter is believed added. A marked-up copy of the original specification is included for convenience to track the changes. Approval and entry are requested.

Claim 5 is amended to as requested by the Examiner. The antecedent basis objections raised regarding claims 2, 3, 7, and 8 are remedied by amendment. Withdrawal of the claim objection and indefiniteness rejection is requested.

Claims 1-9 stand rejected under 35 U.S.C. §103 as allegedly being unpatentable based on Flavin in view of Maggio and further in view of Shaohua. This rejection is respectfully traversed.

The claims are directed to efficiently transferring Ethernet frames over PDH and SDH with minimal mapping and demapping operations. In contrast, the primary reference to Flavin is concerned with making existing SDH transport networks transparent to other networks and using existing SDH networks, instead of building a new infrastructure, to carry different types of frames. Paragraph 0010 states: "[t]he Invention provides an extension to the useful life of the SOH and SONET platforms." Flavin's focus is limited to SDH transport networks.. Flavin lacks transporting Ethernet frames onto a PDH data stream via a GFP, transmitting the mapped Ethernet frames via a first En-network to a SDH network, and then doing the reverse at the

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second LAN. Nor does Flavin teach minimizing mapping and demapping operations, which an important advantage achieved by the claims in this case.

Maggio wants to interface Ethernet and SDH technologies so that Ethernet frame traffic can be transported over a transport SDH network. Maggio introduces a "complete new layer/network which is termed NETS" ([0017]) that uses SDH virtual containers as "basic pipelines" or pipes to connect two Ethernet access points. GFP is used to map the Ethernet frames onto SDH frames. But Maggio does not disclose specifics of how to communicate to/from the SDH, and thus, there is no teaching of mapping Ethernet frames onto a PDH data stream via GFP or of transmitting the mapped frames via a first En-network to the SDH network.

From the translated abstract, claims, and figures (not translated) of Shaohua, Shaohua appears to disclose a data transmission method for combining Ethernet with PDH. From claim 7 and Figure 3, Shaohua seems to teach an Ethernet frame sent over a link between two LANs in accordance with the following: [LAN1 network using Ethernet protocol]→LAPP mapping→ [PDH network using Ethernet/LAPP/PDH protocols]→ [SDH network using Ethernet/LAPP/PDH/SDH protocols]→ [PDH network using Ethernet/LAPP/PDH protocols]→LAPP demapping→ [LAN2 using Ethernet protocol]. In this notation, the network and protocol(s) used in that network are framed with brackets and mapping and demapping operations are not bracketed.

For better understanding Maggio's teachings, consider the conventional approach to Ethernet LAN frame transport: [LAN1 network using Ethernet protocol]→HDLC mapping→[PDH network using Ethernet/HDLC/PDH protocols]→HDLC demapping→GFP mapping→[SDH network using Ethernet/GFP/SDH protocols]→GFP demapping→HDLC mapping→[PDH network using Ethernet/HDLC/PDH protocols]→HDLC demapping→[LAN2

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using Ethernet protocol]. Maggio is concerned with the part: GFP mapping→[SDH network using Ethernet/GFP/SDH protocols]→GFP demapping. Shaohua teaches using LAPP mapping/demapping as described above. Note that this conventional approach requires 6 mapping/demapping operations while the independent claims in this case only employ two. In contrast to the GFP mapping/demapping claimed, the LAPP mapping/demapping in Shaohua is more complex, non-standardized, and less flexible as compared to standardized GFP mapping/demapping, which allows the use of VCx containers.

The claimed technology provides a relatively low degree of complexity and cost as compared to present day solutions. For example, GFP frames can be transported via SDH without being unpacked at the connection between the SDH-network and the En-carrier. This provides savings both in equipment and work. Indeed, the Ethernet frames, having been mapped into GFP frames, can be transported the entire path without any additional packing/unpacking. By introducing a GFP mapping early in the communication link, the communication is simplified using GFP end-to-end requiring only two, standardized mapping/demapping operations. The simplified communication link can be described as follows:

[LAN1 using Ethernet protocol]→GFP mapping→[PDH network using Ethernet/GFP/PDH protocols]→[SDH network using Ethernet/GFP/SDH protocols]→[PDH network using Ethernet/GFP/PDH protocols]→GFP demapping→[LAN2 using Ethernet protocol].

Alternatively, the simplified communication link can be described as follows:

[LAN1 using Ethernet protocol]→GFP mapping→[PDH network using Ethernet/GFP/PDH protocols]→[SDH network using Ethernet/GFP/SDH protocols]→ GFP demapping→[LAN2 using Ethernet protocol].

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In this alternative, LAN2 is directly connected to SDH. Shaohua does not allow this alternative solution as it requires PDH on both sides of the SDH.

A further important advantage of the claimed technology, as compared to Shaohua, is that the PDH layer in the SDH domain disappears, leading to lower overhead and complexity and thus reduced cost for the communication link.

Accordingly, Shaohua lacks the claimed GFP mapping/demapping which means that Shaohua's approach lacks the relative simplicity, less expensive, and more flexible communication link the claimed technology achieves between two geographically separated LANs. Neither Flavin nor Maggio discloses or suggests using GFP in combination with PDH. Flavin does not use GFP early in the communication link in combination with PDH. Maggio is only concerned with providing a complete new layer/network over the SDH/SONET network in order to manage the transport of Ethernet traffic over SDH/SONET network. Although Maggio uses GFP in combination with SDH, there is no teaching of using GFP earlier in the communication link in combination with PDH as in the claimed technology. The claimed use of GFP mapping/demapping avoids unpacking between the En carrier in the PDH network and SDH. Maggio does not even mention PDH.

The application is in condition for allowance. An early notice to that effect is requested.

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Respectfully submitted,

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